add quicklime to this. Allow it to stand some hours, and distil again. Show that this is much stronger, catches fire readily, and tastes more burning. Make a solution of common sugar in a large flask; add yeast, and fit a cork with a bent tube to the flask. Let the tube dip into lime water. Place it in a warm place, and after some days show that spirit has been formed in the flask by distilling the liquid and collecting the portion coming over first.

All the substances and experiments mentioned above are to be shown to the class. This does not preclude such other experiments and illustrations as may suggest themselves to the teacher.

NOTES

WE trust that it is not in the least likely that the proposal "From a Correspondent" in Saturday's *Times* to remove the Science Museum to make way for a permanent Colonial Museum will receive serious attention in any influential quarter. For this proposal really involves the monstrous step of shunting collections which have been brought together with so much trouble and at so much expense. Their value was recognised by the Duke of Devonshire's Commission. As to the Colonial Museum we shall be in a better position to express an opinion upon it when its nature and objects are further developed. We wish in no way to disparage it; but there is room for it elsewhere. Why should its founders try to build it on the ruins of an existing and valuable collection?

THE thirty-fifth meeting of the American Association for the Advancement of Science will be held at Buffalo, from Wednesday, August 18, until Tuesday evening, August 24, 1886. For the third time, at intervals of ten years each, the Association has accepted an invitation to hold a meeting in Buffalo. The Local Committee intend to make the meeting a great success: and members who were at the meeting of 1876 need only to recall it in order to form an idea of what the coming meeting promises to be. The facilities which the city offers are all that can be desired, both in regard to rooms for the several Sections and in hotel accommodation, while the health and comfort of the city in the month of August are well known. The headquarters of the Association will be at the High School, and all the offices and meeting-rooms will be in that building or in one of the schoolhouses near by. The hotel headquarters will be at the Genesee House. A special circular in relation to railroads, hotels, and other matters, has been issued by the Local Committee. Arrangements for excursions and receptions will be announced by the Local Committee. The officers of Sections D and H have issued special circulars relating to the meeting, which can be had by addressing the respective secretaries. Special information relating to any of the Sections will be furnished by their officers. In Section E special attention will be given to the problems connected with the Niagara Falls and its gorge.

WE have only just received the *Proceedings* of the American Association for the Advancement of Science at the Philadelphia meeting of 1884. The volume is particularly well printed and fully illustrated.

THE Institution of Naval Architects is holding a summer meeting at Liverpool this week.

THE recent elections have done nothing to alter the comparatively small but distinguished band of men of science in the House of Commons. Sir John Lubbock retains his seat for London University. The electors of South Manchester have remained faithful to Sir Henry Roscoe, and those of South Leeds to Sir Lyon Playfair. Mr. Story-Maskelyne returns from North Wiltshire, and Sir Edward Reed, after one of the principal contests of the election, from Cardiff.

M. JANSSEN is continuing, at Meudon, his researches on the influence of gases on the rays of the spectrum. He is building tubes, which can be loaded with 1000 atmospheres of hydrogen, oxygen, or carbonic acid. In this last case the real density of the gas will be superior to the density of water. The filling of the tubes to these high pressures is not directly obtained by pressure; they are loaded by a sort of step-by-step or cascade process. This is a very long affair. After the filling of these tubes some time must be allowed for the settling down of the dust which has been raised by compression. As long as the cloud of minute particles is floating, the colour of the light traversing longitudinally the tubes is blood-red. This effect can be shown with a far lessened pressure.

MR. J. M. HORSBURGH has been appointed Secretary of University College, London, to enter upon his duties on October 1.

DURING the last ten years M. Marcel Deprez has been engaged in experiments connected with the transmission of force by means of electricity. The Rothschilds some time since provided him with an unlimited credit to prosecute his researches at Creil, under the inspection of a commission of thirty-eight men of science. On Friday the commission met to hear a report on the results at present obtained, drawn up at their request by M. Maurice Lévy. This report was unanimously approved. It appears from it that we can now, with only one generator and only one receiver, transport to a distance of about 35 miles a force capable of being used for industrial purposes of 52-horse power, with a yield of 45 per cent., without exceeding a current of 10 ampères. When the amount of force absorbed by the apparatus used to facilitate the recent experiment, but not required in the applications to industrial purposes, is added, the yield will be nearly 50 per cent. The commission certifies that the machines now work regularly and continuously. The maximum electromotive force is 6290 volts. Before the construction of the Marcel Deprez apparatus the maximum force did not exceed 2000 volts. The report states that this high tension does not give rise to any danger, and that no accident has occurred during the past six months. The commission is of opinion that the transmitting wire may be left uncovered on poles provided it be placed beyond the reach of the hand. It estimates at nearly 5000*l*. the probable cost of the transmission of 50-horse power round a circular line of about 70 miles. This price would, however, be much diminished if the machines were frequently constructed. The commission, in the name of science and industry, warmly congratulated M. Deprez on the admirable results which he had obtained, and expressed thanks to the Rothschilds for the generous aid extended to the undertaking.

THE eighth congress of the French Geographical Societies will meet at Nantes on the 4th proximo, and will continue until the 9th.

IT is stated that Baron de Miklouho-Maclay is now busy getting printed at St. Petersburg, by command of the Czar, the result of his scientific researches in New Guinea from 1870 to 1883.

A CONFERENCE was held by the National Fish Culture Association on Monday last at the Colonial and Indian Exhibition. Sir Albert K. Rollit, M.P., presided. The chairman, in delivering the presidential address, stated that the Association had made a great impression upon the public as to the necessity for remedial, protective, and other measures in the interest of our fishing industries and population. The Association was doing work which many other nations and colonies thought it expedient and economical to do upon a much larger and more expensive scale. He therefore thought the public ought to support it liberally in order to enable it to carry out the work which could not be left undone without serious danger to one of the greatest industries of this country. Mr. Oldham Chambers then read a paper upon "Carp Culture," which was followed by the Rev. C. J. Steward with a paper upon "Marine Temperatures and their Influence upon Fishes," and Mr. Willis-Bund with a paper upon "The Influence of the Weather upon the Migration of Fish." After the several papers had been fully discussed, the proceedings terminated with a vote of thanks to the chairman for presiding.

IN a recent article the *Ceylon Observer* refers to the power of the coco-nut palm to conduct lightning. Sir Emerson Tennent long ago pointed out that this tree acts as a conductor in protecting houses from lightning, and in one instance 500 palms were struck in a single plantation during a succession of thunderstorms in April 1859. But the trees themselves suffer terribly in the process, for however slightly they may be touched by the electric fluid, they die. Sometimes only the edges of the branches are singed, at others a few leaves turned brown alone show where the tree was touched, yet however slight the apparent effect, in course of time the tree withers gradually and dies. In conclusion the journal quoted inquires why it is that coco-nut palms which have merely had their external parts, their foliage, almost imperceptibly singed should be as much doomed to death as those which have had their vital parts permeated by the lightning, the fatal result being only protracted in the one case, while it is instantaneous in the other.

AT Nottingham the University College, Technical Schools, and a Museum are under the same committee as the Free Library; and from the not very carefully edited Report of that committee the convenience of combination is further shown by special classes being opened at the first of them for elementary school teachers, while the expense is defrayed by the School Board. The Technical Schools, whose evening class students we trust will far exceed in number the regular daily pupils, are largely supported by voluntary contributions from the Drapers' Company; so natural and appropriate a use to put such money to, that it is to be hoped that the reforming spirit of the age will lead to the same commendable action voluntarily on the part of all such old trade guilds. As might easily have been foreseen, commercial classes held during the working hours of all those who felt their need have failed; just like the free library at the Guildhall, London, so discreetly opened at first from ten till four—just the hours when the pressure of business was greatest upon every one to whom it could be of any use! An experience of the Nottingham Committee seems to be that the highest working power of their money may be obtained by opening district branches, modestly termed reading rooms, yet each the germ of a branch library; and also that the most economical size for a free library, as far as supplying literature to the working classes is concerned, is from three to four thousand volumes; their libraries of that size having a greater circulation in proportion than either the larger or the smaller ones.

WE have received the first number of a new technical journal named *Industries*, published in Manchester. As its name implies it is the intention of the publishers that it shall cover all the ground of the manifold manufactures of the country, and include the dissemination of technical education in its widest and most useful form. A new departure is taken in technical journalism, inasmuch as the publishers propose to offer a series of substantial rewards to those of their readers who may bring forward some new and useful advance in practical science. These awards will be granted on certain conditions being fulfilled, and will be made by the editors, assisted by two or more gentlemen eminent in the particular science. As a commencement it is the intention to arrange rewards in each of the following subjects, viz. engineering, electricity, and chemistry. In order to increase the value of the reward, and should the successful reader desire it, a patent will be obtained by the publisher for the invention or process, which will be presented to the successful reader before the invention is described in the paper, and further, if a model is necessary, this also will be added to the reward. This inducement ought to add considerably to the subscribers' list, and ensure the success of the paper; at the same time it will without doubt increase, the number of workers and probably add to the already large list of inventions. The paper is nicely printed, and the woodcuts are well executed. We find an illustrated Patent record at the end of the journal, and arrangements are to be made so as to include the more important American and German Patent Specifications. Journals of this class add greatly to the general advancement of technical education, and we wish the new venture every success in its youth and a strong and sturdy future.

A MOSCOW journal states that it is contemplated establishing a university for women in that city, founded on private capital. It is to have three faculties—a mathematical, a natural history one (with medicinal studies), and a philological. Doubt is, however, expressed whether the Government will sanction the scheme.

FROM several parts of Western Norway complaints are being received of the great destruction of fir and spruce cones by a little unknown insect.

FROM the report of the Swedish Academy of Sciences for last year, it appears that the National Museum—which is under the authority of the Academy—succeeded in acquiring some splendid specimens of topazes from Brazil, containing fluids on which experiments are now in progress in the Academy's chemical laboratory. Some specimens of argyrodite, containing the new element germanium, were also acquired, with which Profs. Nilsson and Petterson have been experimenting. The museum for lower invertebrates acquired from Lieut. Sandberg a very valuable collection of lower marine animals from the shores of Northern Russia, collected by this gentleman during his extensive journeys in these parts. At the Academy's biological station on the coast of the province of Bohus, aquaria were kept in perfect working order from June till October. The station was visited by many *savants* for zoological studies. Through Dr. Carlson's researches on the former existence in Sweden of *Trapa natans*, the National Museum has become possessed of more than a thousand sub-fossil trapa fruits from Southern Sweden. In addition to the sums granted by the Government towards scientific researches on the recommendation of the Academy (p. 201), several others were made out of the funds administrated by that institution. Among them are the interest on the large sum left by the late Dr. Regwell for zoological studies, distributed for the first time; a sum of 250*l.* to Dr. S. Arrhenius for the study of the galvanic conductive force of electrolytes, and their relation to physics, at certain institutions in Russia, Germany, and Holland. Prof. Agardh was awarded the yearly Lettersted prize for his celebrated work "Fresh contributions to the Systematic of the Algæ." The Lettersted fund for scientific research amounted at the end of the year to 30,000*l.* A number of smaller sums were also granted by the Academy towards researches on a variety of scientific subjects.

MR. OTIS T. MASON sends us a reprint of his valuable paper on the progress of anthropology in 1885, which was originally embodied in the Smithsonian report for that year. Here anthropology is used in a very wide sense, giving scope to remarks on comparative psychology, biology, archæology, and sociology, as well as to the more closely-connected subjects of general and special ethnology. Some of the more important recent works on these several branches are noticed in greater or less detail, and there is appended an ample "Bibliography of Anthropology, 1885," which is arranged in alphabetical order, and which will be found most useful for purposes of general reference. It includes not only independent works and memoirs, but also special papers bearing on the subject, which have been contributed in the specified period to various English, American, French, German, and other scientific journals. Amongst the essays more fully noticed are M. Gabriel de Mortillet's work on "The Precursor of Man," advancing the theory that the flints of Thenay were the workmanship, not of man as fully developed, but of his immediate predecessor, the anthropopithecus; Dr. Lissauer's paper on human craniology, introducing the sagittal suture as a new element in obtaining anthropological measurements; Dr. Hermann Welcker's treatise on the capacity of the cranium in connection with the three diameters, with classifications of races according to their skull capacity; Dr. Topinard's masterly work on general anthropology, from which copious extracts are made; Dr. Otto Stoll's contribution to the comparative philology of Central America, embodying a scientific classification of the eighteen languages still current in Guatemala. Here the Maya family is specially dealt with and divided into four distinct groups: Tzental (Chendal), Pokonchi, Quiché, and Marne. It is incidentally mentioned that in 1885 the Woman's Anthropological Society was organised in Washington under the presidentship of Mrs. Tilly Stevenson. The object of this association is stated to be "to conduct investigations to which the avenues are especially open to women, and to encourage the sex in the prosecution of scientific work."

THE catalogue of the Library of the Chemical Society, arranged according to subjects with indexes containing authors' names and subjects, will be useful to chemists.

VOL. I. of "Studies from the Biological Laboratories of the Owens College" (Manchester: Cornish) is mainly a reprint of papers that have appeared in various journals.

WE have received the last (19th) Report of the Peabody Institute of Baltimore. There is no marked advance over past years in any department, but all have been prosperous and the results attained have been satisfactory. The attendance at the courses of lectures was exceptionally large, but the use of the library has been somewhat reduced owing to the opening of another free public library in Baltimore. Amongst the lectures during the year were courses on Arctic Explorations and Life in the Arctic Regions, on Mexico, Ancient and Modern, on the Mound Builders of Ohio, and on the Poetry of Science.

MR. C. G. ROCKWOOD, jun., of Princeton, N.J., writes that the shock of earthquake at Sandy Hook, New York, of June 11, noticed in NATURE of June 17 (p. 153) is an error. The tremor which was felt in that vicinity at the time stated, and which was at first reported as an earthquake, was afterwards traced to the firing of heavy guns on board the U.S.S. *Juniata*, at that time approaching Sandy Hook.

THE additions to the Zoological Society's Gardens during the past week include a White-handed Capuchin (*Cebus hypoleucus*) from Brazil, presented by Madam Sangiorgi; a Levaillant's Cynictis (*Cynictis penicillata* ♂), five Suricates (*Suricata tetradactyla* ♂ ♂ ♀ ♀ ♀), two Triangular Spotted Pigeons (*Columba guinea*), three Vinaceous Turtle Doves (*Turtur vinaceus*), two Cape Turtle Doves (*Turtur capicola*) from South Africa, presented by Mr. R. A. Fairclough; two Red Foxes (*Canis fulvus* ♂ ♀) from North America, presented by Messrs. Enson, Weber, and Co.; a Masked Paradoxure (*Paradoxurus larvatus*) from Hong Kong, presented by Mr. J. Orange; five Forster's Milvagos (*Milvago australis*) from the Falkland Islands, presented by Mr. James Moore; a Tawny Owl (*Syrnium aluco*), British, presented by Master C. G. Gregory; five Common Toads (*Bufo vulgaris*) from the South of France, presented by Mrs. F. Walker; a King Vulture (*Gypagus papa*) from Brazil, deposited; three Lions (*Felis leo* ♂ ♀ ♀) from Africa, a Grey Squirrel (*Sciurus cinereus*), a Mink (*Putorius vison*), three Hudson's Bay Squirrels (*Sciurus hudsonius*), a Virginian Eagle Owl (*Bubo virginianus*) from North America, purchased; two Mule Deer (*Cariacus macrotis* ♂ ♂), born in the Gardens.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1886 *AUGUST* 1-7

(FOR the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on August 1

Sun rises, 4h. 26m.; souths, 12h. 6m. 4·9s.; sets, 19h. 46m.; decl. on meridian, 17° 59′ N.: Sidereal Time at Sunset, 16h. 27m.

Moon (one day after New) rises, 5h. 59m.; souths, 13h. 19m.; sets, 20h. 26m.; decl. on meridian, 11° 23′ N.

Planet	Rises	Souths	Sets	Decl. on meridian
	h. m.	h. m.	h. m.	° ′
Mercury	6 43	13 26	20 9	7 52 N.
Venus	1 45	9 54	18 3	22 29 N.
Mars	10 55	16 23	21 51	7 0 S.
Jupiter	9 27	15 31	21 35	0 5 N.
Saturn	2 21	10 28	18 35	22 10 N.

Occultations of Stars by the Moon (visible at Greenwich)

Aug.	Star	Mag.	Disap.	Reap.	Corresponding angles from vertex to right for inverted image
			h. m.	h. m.	° °
5	95 Virginis	6	21 54	22 53	108 297
5	94 Virginis	6	22 3	near approach	202 —

Aug.	h.	
1	15	Mercury stationary.

Variable Stars

Star	R.A.	Decl.			
	h. m.	° ′		h. m.	
U Cephei	0 52·2	81 16 N.	Aug. 2,	22 30	*m*
λ Tauri	3 54·4	12 10 N.	,, 3,	22 12	*m*
U Monocerotis	7 25·4	9 32 S.	,, 6,		*M*
S Virginis	13 27·0	6 37 S.	,, 1,		*m*
V Coronæ	15 45·5	39 55 N.	,, 5,		*M*
U Ophiuchi	17 10·8	1 20 N.	,, 2,	0 38	*m*
R Scuti	18 41·4	5 50 S.	,, 1,		*M*
η Aquilæ	19 46·7	0 43 N.	,, 5,	21 30	*m*
δ Cephei	22 24·9	57 50 N.	,, 4,	0 0	*m*

M signifies maximum; *m* minimum.

Meteor Showers

Showers have been observed at this season from the following radiants:—The *Andromedes* (I.), from R.A. 8°, Decl. 36° N.; from Camelopardus, R.A. 12°, Decl. 70° N.; near η Persei (the *Perseids*), R.A. 45°, Decl. 56° N.; near η Herculis, R.A. 254°, Decl. 37° N.; near λ Aquarii, R.A. 342°, Decl. 9° S.; from Lacerta, R.A. 342°, Decl. 40° N.; and one near Fomalhaut, R.A. 342°, Decl. 34° S.

Stars with Remarkable Spectra

Name of Star	R.A. 1886·0	Decl. 1886·0	Type of spectrum
	h. m. s.	° ′	
D.M. + 44° 3877	21 31 42	44 51·9 N.	III.
249*a* Schjellerup	21 37 13	34 59·4 N.	IV.
μ Cephei	21 40 1	58 15·4 N.	III.
254 Schjellerup	21 40 41	2 44·4 S.	III.
258 Schjellerup	21 59 1	27 47·8 N.	III.
18 Cephei	22 0 26	62 33·8 N.	III.
D.M. + 56° 2821	22 34 8	56 12·2 N.	III.
β Pegasi	22 58 14	27 27·8 N.	III.

THE VOLCANIC ERUPTION IN NEW ZEALAND

FURTHER details have been received of the volcanic eruption in the Hot Lake district of New Zealand, which has been the scene of a terrible and unexpected catastrophe which